Remarks

Claims 1-27 were originally filed with this application. In the present response, claims 1, 11, 12, 21, 22, and 27 have been amended, and claim 20 has been canceled. No new matter has been added by the amendments presented herein. Reconsideration of the present application in view of the above amendments and following remarks is respectfully requested.

Specification

Applicant has amended paragraph [0017] to correct an inadvertent error that remained unnoticed until the present response was being prepared. In particular, Applicant has corrected the concentration of commercially available hydrobromic acid from 48% or 62% by volume to 48% or 62% by weight. To support the amendment, Applicant has enclosed page 1139 from the 2005-2006 Adrich catalog, which provides a product (highlighted) that is 48 % by weight hydrobromic acid in water. Furthermore, Applicant submits that one of ordinary skill in the chemical arts would know that standard hydrobromic acid is sold in an aqueous solution, and its concentration is based on its percentage by weight, not volume.

In the outstanding Action, the Examiner required that the status of copending applications be updated in the specification. The Examiner noted that neither of the cited applications has actually issued. Accordingly, Applicant has amended the CROSS-REFERENCE TO RELATED APPLICATIONS section of the specification by deleting the portion referring to the patent number and issue date for copending patent application Serial No. 10/342,475, filed January 16, 2003 and by adding the serial number and filing date for the copending patent application entitled "BROMINATION OF HYDROXYAROMATIC COMPOUNDS". Paragraph [0018] was also amended to include the serial number and filing date for the copending application discussed therein. The attorney docket numbers have also been deleted from the CROSS-REFERENCE TO RELATED APPLICATIONS section and from paragraph [0018] of the specification.

Rejection Under 35 U.S.C. § 112, Second Paragraph

Claim 20 and its dependent claim 21 were rejected under 35 U.S.C. § 112, second paragraph for being indefinite. It is the Examiner's opinion that the term "organic solvent" recited in claim 20 is ambiguous because "water" is included in the list of solvents recited in dependent claim 21, and water is not considered to be organic. As discussed below with respect to the prior art claim rejections, Applicant has canceled claim 20, which previously depended from claim 1, and has included the solvent limitation recited therein into claim 1. To overcome the § 112 rejection, amended claim 1 recites a "polar solvent" without including the word "organic". Support for the amendment to claim 1 comes from canceled claim 20, as well as from paragraph [0016] of the specification, which states that polar solvents may also be present in the reaction mixture. In addition, claim 21, which provides a list of polar solvents, has been amended to depend from claim 1.

Claim 22, which previously depended from claim 20, now canceled, has also been amended to be dependent from claim 1. In amended claim 22, Applicant has added the term "polar" before "solvent". Support for this amendment is found in paragraph [0016], which lists acetic acid as a polar solvent.

Claim 11 and its dependent claim 12 were also rejected under 35 U.S.C. § 112, second paragraph for being indefinite. It is the Examiner's opinion that the term "anhydrous" recited in claim 11 is ambiguous because claim 12 indicates that water is also present in the reaction mixture. To clarify the meaning of the claim and overcome the rejection, Applicant has amended claim 12 to recite that water is added to the anhydrous acidic medium recited in claim 11. Support for the amendment comes from paragraph [0023], which states that water may be added to the reaction mixture when the reaction is run under anhydrous conditions. For further clarification, Applicant has amended claim 11 to include the word "acidic" before "medium."

Based on the amendments discussed above, the rejection of claim 20 under 35 U.S.C. § 112, second paragraph is now moot, and the § 112 rejections of claims 11, 12, and 21 have been overcome.

Rejections Under 35 U.S.C. §§ 102(b) and 103(a)

Claims 1, 2, 4-6, 11-20, 23, 26 and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by Neumann, *J. Chem. Soc. Chem Comm.* 1285-87 (1988). It is the Examiner's opinion that the reference teaches the process for preparing a brominated hydroxyaromatic compound recited in Applicant's claims.

Claims 1, 2, 4-6, 11-20, 23, 26 and 27 were also rejected under 35 U.S.C. § 103(a) as being obvious over Neumann. It is the Examiner's opinion that the use of other reactants not exemplified in the reference, as well as optimal reaction conditions, would be obvious to one of ordinary skill in the art.

To overcome the rejections, Applicant has amended independent claims 1 and 27 to require that the reaction mixture must also include a polar solvent. Support for the amendment comes from canceled claim 20 and paragraph [0016], which states that a polar solvent may also be present. This added limitation is neither taught nor suggested by Neumann.

In contrast, Neumann teaches away from Applicant's method, as recited in amended claims 1 and 27 by expressly requiring that the solvent be *nonpolar*. In particular, the abstract of the Neumann article states that "[s]elective bromination of phenol and its deriviatives . . . have been achieved by oxybromination . . . catalysed by . . . $H_5PMo_{10}V_2O_{40}$, which is dissolved in a *nonpolar* chlorohydrocarbon solvent . . . " (italics added). In addition, on page 1286 of the article, Neumann states at the bottom of the first column (before Table 1) and the top of the

second column that "PMoV-2 in its acidic form is dissolved in nonpolar solvents, such as 1,2-dichloroethane." Furthermore, 1,2-dichloroethane is used as the solvent in the examples found in the journal article (see Tables 1 and 2, as well as the text).

Therefore, because the oxybromination process recited in Applicant's amended claims 1 and 27 requires that the reaction be conducted in a polar solvent, and because Neumann's reaction mixture requires a nonpolar chlorohydrocarbon solvent, Applicant's claims 1 and 27 can neither be anticipated by nor obvious over Neumann.

Likewise, claims 2, 4-6, 11-19, 23, and 26, which directly or indirectly depend from claim 1 and also require a polar solvent in the recited process, are also patentable over Neumann.

Non-Statutory Double Patenting

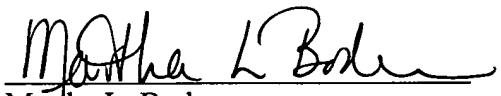
Claims 1-6, 11, 13-23, 25, and 26 were provisionally rejected under the judicially-created doctrine of double patenting over claims 1-8 and 12-23 of copending Application Serial No. 10/650,566. In response to this rejection, Applicant submits herewith a Terminal Disclaimer to obviate the provisional double patenting rejection over the aforementioned copending application and fee therefore in compliance with 37 C.F.R. §§1.321(b) and (c). However, if additional fees are required for the filing of the present Terminal Disclaimer, the Commissioner is hereby authorized to charge those fees to Deposit Account No. 08-1935.

Allowable Subject Matter

Claims 7-10 and 24, which directly or indirectly depend from claim 1, were objected to as being dependent upon a rejected claim base. Applicant submits that the provisional Terminal Disclaimer submitted herewith, as well as the amendment to claim 1, overcomes the rejection of claim 1. Therefore, there is no need to rewrite claims 7-10 and 24 into independent form, and claims 7-10 and 24 are therefore in condition for allowance as originally presented.

There being no further outstanding issues, Applicant submits that claims 1-19 and 21-27 are now in condition for allowance, and Applicant respectfully requests the same. However, if the Examiner has any questions or further comments regarding the pending claims, he is invited to contact Applicant's representative at the number below.

Respectfully submitted,



Martha L. Boden
Attorney for Applicant
Reg. No. 39,115

Dated: September 21, 2005

HESLIN ROTHENBERG FARLEY & MESITI P.C.
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Facsimile: (518)452-5579

2-Benzoic acid hydrochloride, 98%

-3] $H_2NNHC_6H_4CO_2H \cdot HCl$ FW 188.61
837

. . . . . .253 °C (dec.)

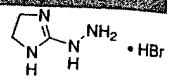
37/38 S: 26-36; TSCA

G	glass btl	5 g	17.50
5G	glass btl	25 g	57.70

2-Imidazoline hydrobromide, 98%

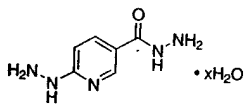
-7] $C_3H_8N_4 \cdot HBr$

. . . . . .185 to 187 °C



	glass btl	1 g	26.10
	glass btl	5 g	87.10

Aminoguanidine hydrazide hydrate, 97% NEW



$\cdot xH_2O$

H_2O FW 185.18

. . . . . .224 to 228 °C

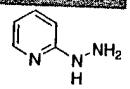
/38-43 S: 26-36/37

	glass btl	5 g	37.80
	glass btl	25 g	131.00

Pyridine, 97%

$C_5H_7N_3$ FW 109.13
,486

. . . . . 90-92 °C/1 mm Hg
. . . . . 41 to 44 °C



38 S: 26-36 Fp: 110°C (230°F)
ic

	glass btl	1 g	16.50
	glass btl	5 g	54.60
	glass btl	25 g	182.50

Pyridine dihydrochloride, 95%

$C_5H_7N_3 \cdot 2HCl$ FW 182.05

. . . . . 212 to 213 °C (dec.)

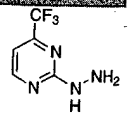
2-36/37/38 S: 26-36

	glass btl	10 g	106.00

2-(Trifluoromethyl)pyrimidine, 99%

$C_5H_5F_3N_4$ FW 178.12

. . . . . .99 to 101 °C



-36/37/38 S: 26-36/37/39-45

G	glass btl	250 mg	21.00
	glass btl	1 g	68.20

[redacted]

$H_5NHNHC_6H_5$ FW 184.24
g amounts of azobenzene

. . . . . .123 to 126 °C

-50/53 S: 53-45-60-61 RTECS# MW2625000; TSCA

	glass btl	25 g	30.40
	glass btl	100 g	84.20

thylsilyloxy)-3,5,7,9,11,13,15-ylpentacyclo[9.5.1.1^{3,9}.1^{5,15}.1^{7,13}]octasiloxane, see thylsilyloxy)-Heptacyclopentyl substituted *Page* 2037

,9,11,13,15-ylpentacyclo[9.5.1.1^{3,9}.1^{5,15}.1^{7,13}]octasiloxane, see acyclopentyl substituted *Page* 2038

Hydridotetrakis(triphenylphosphine)rhodium(I)

[18284-36-1] $[(C_6H_5)_3P]_4RhH$ FW 1157.09
Fieser **11**,255; **13**,144
Dark
mp . . . . . 140 to 146 °C
R: 36/37/38 S: 26-37/39

695088-100MG	glass btl	100 mg	35.40
695088-1G	glass btl	1 g	159.00

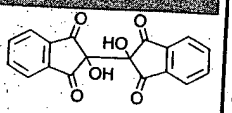
Hydridotris(triphenylphosphine)copper(I) Hexamer, 90%

Triphenylphosphine–Copper(I) hydride Hexamer
[33636-93-0] $[(C_6H_5)_3PCuH]_6$ FW 1961.04
Fieser **14**,175; **15**,166; **16**,175
R: 36/37/38 S: 26-36

364975-1G	glass btl	1 g	34.50
364975-5G	glass btl	5 g	108.50

Hydrindantin, 98%

[103-42-4] $C_{18}H_{10}O_6$
FW 322.27
Used in the determination of amino acids.
Merck **13**,4796; *Beil.* **8**,I,631



mp . . . . . .252 °C (dec.)

H17309-5G	glass btl	5 g	63.80
H17309-25G	poly btl	25 g	211.00

Hydrobenzamide, 98%

[92-29-5] $C_6H_5CH(N{=}CHC_6H_5)_2$ FW 298.38
Beil. **7**,215
mp . . . . . 102 to 105 °C
TSCA

167649-50G	glass btl	50 g	48.30

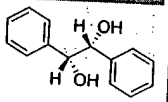
Hydrobenzoin

[492-70-6] $C_6H_5CH(OH)CH(OH)C_6H_5$ FW 214.26
Merck **13**,4798; *Beil.* **6**,1004

301426-250MG	glass btl	250 mg	33.30
301426-1G	glass btl	1 g	91.00

(R,R)-(+)-Hydrobenzoin, 99%

[52340-78-0] $C_{14}H_{14}O_2$ FW 214.26
ee: 99% (HPLC)
Chiral reagent



$[\alpha]_D^{28}$ +93°, c = 2.5 in C_2H_5OH
Beil. **6**,III,5430
mp . . . . . .146 to 149 °C
S: 22-24/25

256277-5G	glass btl	5 g	39.80
256277-25G	glass btl	25 g	159.00

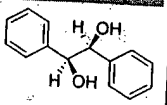
meso-Hydrobenzoin, 99%

[579-43-1] $C_6H_5CH(OH)CH(OH)C_6H_5$ FW 214.26
Beil. **6**,1003
mp . . . . . 137 to 139 °C

294535-5G	glass btl	5 g	40.10
294535-25G	glass btl	25 g	158.50

(S,S)-(-)-Hydrobenzoin, 99%

[2325-10-2] $C_{14}H_{14}O_2$ FW 214.26
ee: 99% (GLC)
Chiral reagent.



$[\alpha]_D^{24}$ –94°, c = 2.5 in C_2H_5OH
Beil. **6**,III,5430
mp . . . . . .148 to 150 °C
S: 22-24/25

256269-5G	glass btl	5 g	56.70
256269-25G	glass btl	25 g	227.00

Hydrobromic acid

[10035-10-6] HBr FW 80.91
Merck **13**,4799; *Fieser* **1**,450; **2**,214; **3**,154; **4**,249; **5**,332; **6**,282; **10**,200
48% aqueous HBr

density . . . . 1.49 g/mL 25 °C vp . . . . . 320 psi (21.1 °C)
vp . . . . . 8 mm Hg (25 °C) vd . . . . . 2.8 (vs air)
R: 35-37 S: 26-45-7/9

TraceSelectUltra, for trace analysis, ≥44% (T)
density . . . . 1.45 g/mL 20 °C

Ag	≤0.02 µg/kg	K	≤0.5 µg/kg
Al	≤0.5 µg/kg	Li	≤0.02 µg/kg
As	≤0.5 µg/kg	Mg	≤0.2 µg/kg
Au	≤0.1 µg/kg	Mn	≤0.05 µg/kg
Ba	≤0.02 µg/kg	Mo	≤0.5 µg/kg
Be	≤0.1 µg/kg	Na	≤1 µg/kg
Bi	≤0.01 µg/kg	Ni	≤0.2 µg/kg
Ca	≤1 µg/kg	Pb	≤0.02 µg/kg
Cd	≤0.05 µg/kg	Pt	≤0.05 µg/kg
Co	≤0.05 µg/kg	Rb	≤0.02 µg/kg
Cr	≤0.1 µg/kg	Se	≤1 µg/kg
Cs	≤0.02 µg/kg	Sn	≤1 µg/kg
Cu	≤0.1 µg/kg	Sr	≤0.02 µg/kg
Fe	≤0.5 µg/kg	Ti	≤0.1 µg/kg
Ga	≤0.02 µg/kg	Tl	≤0.02 µg/kg
Hg	≤1 µg/kg	V	≤0.1 µg/kg
In	≤0.02 µg/kg	Zn	≤0.2 µg/kg
		Zr	≤0.1 µg/kg

23828-250ML-F		250 mL	376.30

48 wt. % in water, 99.99+%
TSCA

339245-5ML	glass btl	5 mL	27.00
339245-100ML	flint glass	100 mL	72.40
339245-500ML	flint glass	500 mL	288.00

ACS reagent, 48%
47.0-49.0% (ACS specification)
Packaged in PVC coated bottles with color-coded caps
ign. residue . . . . ≤0.002% SO_4^{2-} and SO_3^{2-} . . . ≤0.003%
Cl . . . . . ≤0.05% Fe . . . . . ≤1 ppm
I . . . . . ≤0.003% Se . . . . . ≤0.01 ppm
PO_4^{3-} . . . . . ≤0.001% heavy metals (as Pb) . . . . . ≤5 ppm
TSCA

438065-500ML	PVC coated	500 mL	51.50

ACS reagent, 48%
ACS specifications same as product 438065
47.0-49.0% (ACS specification)
TSCA

244260-100ML	flint glass	100 mL	27.40
244260-500ML	flint glass	500 mL	44.70

reagent grade, 48%
TSCA

268003-500ML	glass btl	500 mL	23.00